

# PATENT ABSTRACTS OF JAPAN

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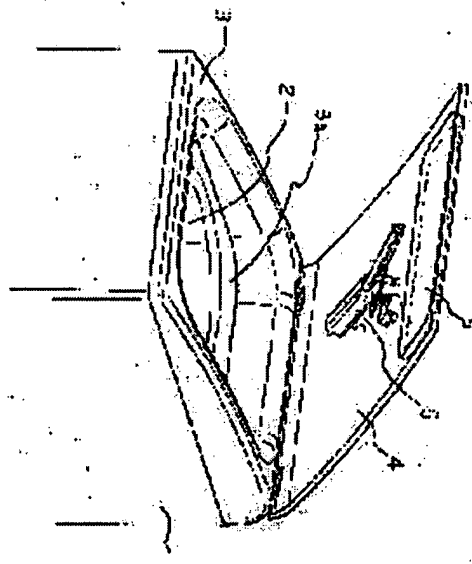
NAKAMURA SHINICHI

## (54) WASHING MACHINE

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To obtain a washing machine with which laundry can be partially washed without damaging its fabric and also the laundry is sufficiently washed in partial washing.

**SOLUTION:** The washing machine is provided with a washing main body 1 with an internally arranged tub part 2, a top cover 3 which covers the upper surface of the main body 1 and has an opening part 3a through which laundry 22 is thrown into the tub part 2 and a lid 4 for covering the upper surface of the top cover 3. The washing machine has a washing device 6 which is constituted of a boiler 7 having a heating means, a water supply pipe 16 for supplying water to the boiler 6 and a jet nozzle 20 for jet-injecting steam and warm water to the laundry 22 through the use of the pressure of steam which is generated from the boiler 7.



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CLAIMS

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[Claim(s)]

[Claim 1] In the washer equipped with the wrap lid for the top face of the body of a washer which had the cistern section arranged in the interior, top covering which has opening which throws the washing into a bonnet and said cistern circles for the top face of said body of a washer, and said top covering The washer characterized by having had the boiler which has a heating means, and a feed water means to supply water to said boiler, and having the washing station which forms the jet nozzle which injects a steam and water in the shape of jet to the washing using the pressure of the steam generated from said boiler, and changes.

[Claim 2] The washer according to claim 1 characterized by the bottom so that the jet nozzle of said washing station may be arranged so that the edge which forms opening of said top panel may be countered, and fixed maintenance of the washing may be carried out by Hazama of said lid and top covering.

[Claim 3] The washer according to claim 2 characterized by attaching said washing station in the field by the side of the cistern section of said lid.

[Claim 4] claims 1 or 2 characterized by making possible adjustable [ of the injection direction of said jet nozzle ] -- either -- the washer of a publication.

[Claim 5] The washer according to claim 1 characterized by making OFF/ON of the feed water to said washing station closing motion of said lid interlocked with.

[Claim 6] It is the washer according to claim 1 characterized by preparing the steamy shutter which intercepts the front face of the nozzle of said jet nozzle, interlocking with [ closing motion / of said lid ] said steamy shutter, and intercepting / opening the front face of said jet nozzle.

[Claim 7] The washer according to claim 1 characterized by to form the end chip section which misses the steam and the water which dispersed in the location which surrounds the perimeter of the nozzle of said jet nozzle, is made to install in the irradiation range of Hazama with said washer, prepares scattering prevention covering formed in the shape of [ bellows-like ] a cartridge by elasticity material, and counters said cistern section of said scattering prevention covering.

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the washer which performs partial washing which removes partial dirt, such as a sleeve of clothing, and a collar.

[0002]

[Description of the Prior Art] It is the plan showing the washer which can perform the conventional conventional partial washing shown in JP,57-10393,U, and drawing 12 has formed the opening 32 which throws clothing into the center section of the wrap top plate 31 for the upper part of the body of a washer. The upper part of this opening 32 is covered with the lid 33 which can be opened and closed freely. Moreover, the washing part 34 which makes a concavo-convex configuration near the opening 32 is formed by the front side of a top plate 31. In addition, various switches are formed in the control unit 35 prepared behind the top plate 31, and setting out of a washing process etc. is enabled. And after washing by rubbing a cuff or collars, such as a cutter shirt, etc. selectively by the washing part 34, from opening 32, the cutter shirt etc. was thrown into the laundry sink within the body of a washer (not shown), and it was washing by operating the switch of a control unit 35.

[0003] However, the activity which needs the force of rubbing clothing against the washing part 34 is hard work for an operator, and had the trouble of being user-unfriendly. Then, there is a washer equipped with partial washing equipment as shown in JP,8-32285,B. Drawing 13 is the perspective view of the partial washing equipment 41, in drawing, 42 is cylinder-like the body of revolution for washing, and two or more brush objects 43 are formed in the peripheral surface. The turning effort of a motor 45 established in the body 44 transmits and carries out revolution actuation of this body of revolution 42 for washing through the reducer style 46 and a revolving shaft 47. Moreover, he forms the washing base 48 under the body of revolution 42 for washing, and is trying to pass the washing 49 (not shown) between the body of revolution 42 for washing, and the washing base 48. The brush object 43 has set up spacing of the body of revolution 42 for washing, and the washing base 48 so that it may \*\*\*\* on the washing base 48 top face. And if the body of revolution 42 for washing is rotated in the direction of arrow-head A and the washing 49 is inserted from the end-face 51 side of the sliding surface-like crevice 50, while, as for a washed object, the washing 49 will pass through the inside of the sliding surface-like crevice 50, the brush object 43 washes a washed object. That is, the touch area of the body of revolution 42 for washing and the washing 49 is increased, and the area which washes partial dirt is increased.

[0004]

[Problem(s) to be Solved by the Invention] In order to make an operator's burden light and to wash the dirt of the specific part of the washing selectively with the above conventional washers Although he is trying to wash partial dirt by making it \*\*\*\* on the brush object 43 of the body of revolution 42 for washing which contains the partial washing equipment 41 of the method which carries out revolution actuation of the body of revolution 42 for washing which established the brush object 43 on the body of a washer (not shown), and rotates the washing 49 With the partial washing equipment 41 of the method which carries out revolution actuation of the brush object 43, there was a fault that the nonconformity

that the burden to the washing 49 for a slide contact for the brush object 43 and the washing 49 to wash the washing 49 will be large, and will damage the ground of the washing 49 selectively arose. And the bruise of the ground of parts, such as a collar and a sleeve, became intense rather than other parts with \*\* which is repeating and washing dirt, the cone collar, the sleeve, etc. with conventional partial washing equipment 41, and even if it was in the condition which can still be used except parts, such as a collar and a sleeve, there was also a trouble of having produced the result which shortens the life again. [0005] This invention was not made in order to solve the above technical problems, it can perform partial washing of the washing, without damaging the ground of the washing, and aims at obtaining the washer which had sufficient detergency in partial washing further.

[0006]

[Means for Solving the Problem] The body of a washer which had the cistern section arranged in the interior in the washer concerning this invention, In the washer equipped with the wrap lid for the top face of top covering which has opening which throws the washing into a bonnet and said cistern circles for the top face of said body of a washer, and said top covering It has the boiler which has a heating means, and a feed water means to supply water to said boiler, and has the washing station which forms the jet nozzle which injects a steam and water in the shape of jet to the washing using the pressure of the steam generated from said boiler, and changes.

[0007] Moreover, the jet nozzle of said washing station is arranged so that the edge which forms opening of said top panel may be countered, and it is made to carry out fixed maintenance of the washing by Hazama of said lid and top covering.

[0008] Moreover, said washing station is attached in the field by the side of the cistern section of said lid.

[0009] Moreover, it makes possible adjustable [ of the injection direction of said jet nozzle ].

[0010] Moreover, OFF/ON of the feed water to said washing station is made for closing motion of said lid to be interlocked with.

[0011] Moreover, the steamy shutter which intercepts the front face of the nozzle of said jet nozzle is prepared, and said steamy shutter is interlocked with closing motion of said lid, and intercepts / opens the front face of said jet nozzle.

[0012] Moreover, surround the perimeter of the nozzle of said jet nozzle, it is made to install in the irradiation range of Hazama with said washer, scattering prevention covering formed in the shape of [ bellows-like ] a cartridge by elasticity material is prepared, and the end chip section which misses the steam and water which dispersed in the location which counters said cistern section of said scattering prevention covering is formed.

[0013]

[Embodiment of the Invention] The important section perspective view and drawing 2 which show the washer whose gestalt 1. drawing 1 of operation is the gestalt 1 of implementation of this invention are the sectional view of drawing 1 , and in drawing, the cistern section into which 1 puts the body of a washer and 2 puts the washing, and 3 are wrap top coverings about the upper part of the cistern section 2, and have prepared opening 3a which throws the washing into a center section. 4 is the lid which closes opening 3a, and forms the monitor aperture 5. And a lid 4 is supported by the top covering 3 and revolution supporting-point 4a free [ closing motion ]. 6 is the washing station arranged in the field of the lid 4 of the location which counters opening 3a. In addition, 21 is a switch mentioned later.

[0014] Next, the configuration of a washing station 6 is explained. Drawing 3 (a) is the perspective view of a washing station 6, and drawing 3 (b) is the decomposition perspective view of a washing station 6. 7 is a boiler and a flexible tube 8 is connected. A flexible tube 8 For the cam 12 and cam 12 which are a driver in contact with the cam groove 11 which is the follower which determines the revolution supporting point 10 of the tube guide 9 to support and the tube guide 9 supported free [ a revolution ] on a lid 4, and the support include angle of a tube guide 9, and a cam groove 11, rotation It consists of revolving shafts 14 of the motor 13 to give and a motor 13.

[0015] Thus, actuation of the washer equipped with the constituted washing station 6 is explained based on drawing 3 , drawing 4 , and drawing 5 . The sectional view of the washer with which drawing 4 set

the washing, and drawing 5 are the block diagrams having shown the internal configuration of a boiler. \*\*\*\* of top covering which 15 has in the tooth back of the washing, the feed pipe with which 16 supplies water to a boiler 7 in the water from a water pipe etc., The valve in which, as for 17, impregnation of water carries out ON/OFF control, the heater at which 18 heats a boiler 7, The power source which connects 19 to a heater 18, the jet nozzle attached in the outlet of the flexible tube 8 with which the water included in a boiler 7 and a steam pass along 20, The switch with which 21 is interlocked with ON after the valve 17 has shut OFF and a lid 4 for the lid 4 in the state of an open beam, and 22 are the washing arranged in the location which counters a jet nozzle 20.

[0016] First, the field of the dirt part of the washing 22, such as a collar and a sleeve, is carried out, put and arranged between a lid 4 and the top covering 3 on the top face, and the washing 22 is arranged so that it may counter at a jet nozzle 20. At this time, by shutting a lid 4, a switch 21 is turned on and a valve 17 is opened. And a power source 19 is put into a heater 18, power is supplied, and a boiler 7 is heated at 100 degrees or more. And since it is in the condition which the valve 17 opened, tap water is supplied to a boiler 7 via a feed pipe 15. The water included in the interior of a boiler 7 boils, and it becomes a steam. Thus, if water becomes a steam, vapor pressure will rise and the interior of a boiler 7 will become high voltage. And the steam and warm water of the boiler 7 interior jump out of the nozzle (not shown) at the head of a jet nozzle 20 with this pressure. The nozzle (not shown) at the head collides certainly [ since it is arranged in the location which counters \*\*\*\* 15 of the top covering 3 ] to that of the washing 22 which the steam and warm water which jumped out of the jet nozzle 20 have on \*\*\*\* 15 of the top covering 3, and a jet nozzle 20 removes dirt 22a of the washing 22. In addition, if the commercial detergent is beforehand applied to the dirt 22a part of the washing 22, since dirt 22a will begin to melt, clearance of dirt becomes easy. }

[0017] Although the steam and warm water which were injected from the jet nozzle 20 splash when it collides with the washing 22, and they scatter on all sides, since the steam and warm water which scattered up are interrupted with a lid 4, dew a lid 4 and fall into the cistern section 2, it does not jump out besides the body 1 of a washer.

[0018] Here, the irradiation range L of the jet nozzle 20 of a washing station 6 and the washing 22 (refer to drawing 5 ) is explained. If an artificial solid fabric (what simulated collar dirt) is used for a trial cloth as the washing 22 and it asks for (%) whenever [ washing ] based on a JIS electric washing machine C9606 washing trial, a result as shown in drawing 6 will be brought. (%) is [ whenever / washing ] (%) = (front [ after / washing / reflection factor-washing ] reflection factor) / (front [ original cloth reflection factor-washing ] reflection factor) x100 whenever [ washing ] by the reflection factor method. It computes using a formula.

[0019] In addition, using the thing of the output of 1350W as conditions for an experiment, every 100g/m of penetrant removers should supply water to the boiler 7 in the tap water adjusted by 22 degrees C, and the heater 18 of a boiler 7 should carry out optimum dose spreading of the liquid detergent only for partial washings of marketing beforehand on a contamination cloth. Moreover, the aperture of a jet nozzle 20 used the 2mm thing.

[0020] If this experimental result is looked at, whenever [ washing / 40% of / which is obtained by the usual washer washing ] can be obtained with the irradiation range L of 65mm. Therefore, the irradiation range L of a jet nozzle 20 and the washing 22 can detach to 65mm, and can also acquire a remarkable cleaning effect. Thus, since a dirt part can be washed also in the distance which separated to 65mm, the conditions of the thickness of the washing 22 are made widely. In addition, it can carry out in a short time extremely with 0.15 seconds till the completion of dirt washing of the surface of cloth which irradiated a steam and warm water.

[0021] next, feed water of the steam and water which are injected from a jet nozzle 20 -- amount of water is explained. the above -- the same -- an irradiation range L -- the irradiation time per 10mm and jet stream cross section -- 0.3 seconds -- carrying out -- the amount of closing motion of a valve 17 -- changing -- feed water -- as a result of changing amount of water and performing a washing trial, the result as shown in drawing 7 was able to be obtained. In addition, since whenever [ washing ] seldom changed in Hazama's irradiation range L of 0-10mm but whenever [ of a little less than 46% / high

washing ] had been obtained from change of whenever [ washing / of above-mentioned drawing 6 ], having set the irradiation range L to 10mm experimented with the irradiation range L of 10mm. Consequently, whenever [ washing / 40% of / which is obtained by the usual washer washing ] can be obtained by amount of water 30g/m, and can wash by the flow rate of very little water.

[0022] Moreover, since there is an inclination for whenever [ washing ] not to go up, by the feed water flow rate of 70g or more to a boiler 7 and the feed water beyond this becomes useless as shown in drawing 7 , it is unnecessary in feed water of 70g or more. Although relation with the capacity, as for this, for a boiler 7 to make a steam also influences, whenever [ washing ] is 55% or more, and since it is more than whenever [ required / washing ], water supply amounts of 70g or less are enough as it.

[0023] Therefore, according to the configuration of the washer equipped with the washing station 6 indicated in the gestalt 1 of operation The field which has partial dirt, such as a collar and a cuff, between a lid 4 and the top covering 3 is arranged on both sides of the washing 22 so that it may come to the part of \*\*\*\* 15 of the top covering 3. By arranging the jet nozzle 20 of a washing station 6 in the location which counters \*\*\*\* 15 of the top covering 3 Since a steam and warm water can be injected from a jet nozzle 20, can make it able to collide with the washing 22, and a dirt part can be washed, it will interlock further if a lid 4 is opened, and a valve 17 closes Supply of water stops, injection of the steam from a jet nozzle 20 and warm water is also stopped, and neither a steam nor warm water is flown to a user. Moreover, since a valve 17 opens where a lid 4 is closed, a fear of closing a lid 4, washing of the washing 22 being performed, and a hot steam not scattering to the exterior of the body 1 of a washer, and exposing a user to the elevated temperature of a steam is absolutely none at the time of the activity of a washing station 6.

[0024] To the gestalt 2. pan of operation, the washing station 6 arranged by the body 1 of a washer shows what performs revolution actuation, and drawing 8 looks at a motion of a flexible tube 8, a tube guide 9, and a jet nozzle 20 from a top face. The configuration of a washing station 6 is the same as that of the gestalt 1 of the above-mentioned implementation, and the explanation is omitted. If power is supplied to a motor 13 from the motor power source 23, a revolving shaft 14 will rotate and the cam 12 attached to the revolving shaft 14 will rotate. If a cam 12 rotates, a load will be applied to a cam groove 11 and a tube guide 9 will move. Rotation of a cam 12 is changed into the reciprocating motion which used the revolution supporting point 10 of a tube guide 9 as the supporting point through the cam groove 11, and a tube guide 9 moves in the direction of an arrow head of drawing 8 repeatedly. Since the steam and warm water which are injected from a jet nozzle 20 since it moves to the washing 22 at this time so that a jet nozzle 20 may trace can be automatically poured uniformly to the large range of the washing 22, the washing range can be made large.

[0025] moreover, the configuration of opening (not shown) which counters opening 2a of the cistern section 2 of the top covering 3 which sandwiches the washing 22 -- a square, although the irradiation range L of the washing 22 and a jet nozzle 20 will separate depending on the rotation include angle of a washing station 6 even if circular Since 40% can be obtained whenever [ washing ] to the irradiation range L of 65mm as shown in the experimental result of the gestalt 1 of operation Wide range partial washing can be washed without dropping washing capacity, even if there are an opening configuration of the top covering 3 and a rotation include angle which the irradiation range L of a jet nozzle 20 and the washing 22 leaves by rotation of a washing station 6 (it becomes far).

[0026] Gestalt 3. drawing 9 of operation shows the sectional view of the washer which is the gestalt 3 of implementation of this invention, and the same thing as the gestalt 1 of the above-mentioned implementation considers as a same sign, and omits that explanation. As 24 is a steamy shutter, 25 is a spring and drawing is shown in drawing 9 (a) When a lid 4 is opened, as a spring 25 reduces the steamy shutter 24, it comes to interrupt the transverse plane of the nozzle (not shown) (nozzle as used in the field of a claim) of a jet nozzle 20 and it is shown in drawing 9 (b) If a lid 4 is closed, the steamy shutter 24 will move contacting the top face of the top covering 3 from the transverse plane of a jet nozzle 20, and the steamy shutter 24 will open the transverse plane of the nozzle (not shown) of a jet nozzle 20. Therefore, when water remains the lid 4 in the boiler 7 at the time of an open beam, even if it becomes a steam and warm water from a jet nozzle 20 and is injected, it is user-friendly, without colliding with the

steamly shutter 24, not jumping out out of the body 1 of a washer, and scattering to a user.

[0027] Gestalt 4. drawing 10 (a) and drawing 10 (b) of operation are the important section perspective view and decomposition perspective view of a washing station showing the washer which is the gestalt 4 of implementation of this invention. In drawing, the same sign is given to the same part as the gestalten 1-3 of the above-mentioned implementation, and the explanation is omitted. Scattering prevention covering formed so that 26 might be formed in the shape of bellows for a flexible raw material, the perimeter of a jet nozzle 20 might be surrounded and it might install to the irradiation range L of Hazama with the washing 22, and 27 had been formed in the location which counters the cistern section 2 of the scattering prevention covering 26, and are the chip section.

[0028] Thus, as shown in drawing 11, the steam and warm water out of which have arranged the scattering prevention covering 26 also between the washing 22 and the jet nozzles 20 (irradiation range L) which were put with \*\*\*\* 15 and the lid 4 of the top covering 3, and it came from the jet nozzle 20 during washing while it surrounded the perimeter of a head of a jet nozzle 20 collide with the washing 22 like the arrow head of a continuous line, and as for the constituted washing station 6, dirt is removed. A steam and warm water disperse at this time. It is reflected with the scattering prevention covering 26, and the steam and warm water which dispersed are cut like the arrow head of a dotted line, and flow out of the chip section 28. That is, the scattering range of a steam and warm water can be stopped to the minimum by forming the scattering prevention covering 26 in which the end chip section 28 which surrounds an irradiation range L part from the perimeter of a jet nozzle 20, and serves as a recess path of a steam with the scattering prevention covering 26 was formed in the location which counters the cistern section 2.

[0029]

[Effect of the Invention] Since this invention is constituted as explained above, it does effectiveness as taken below so.

[0030] In the washer equipped with the wrap lid for the top face of the body of a washer which had the cistern section arranged in the interior, top covering which has opening which throws the washing into a bonnet and said cistern circles for the top face of said body of a washer, and said top covering It has the boiler which has a heating means, and a feed water means to supply water to said boiler. Since it had the washing station which forms the jet nozzle which injects a steam and water in the shape of jet to the washing using the pressure of the steam generated from said boiler, and changes Only the liquid which a cleaning effect is high and are a steam and warm water since a steam and warm water perform partial washing can wash the partial dirt of the washing, and since a solid-state is not contacted, partial washing without a cloth bruise can be performed.

[0031] moreover, since the jet nozzle of said washing station be arrange so that the edge which form opening of said top panel may be counter, and it be made to carry out fixed maintenance of the washing by Hazama of said lid and top covering, where a lid be close, the washing can be fix in the body of a washer, and the steam and warm water which be inject from a jet nozzle can be certainly apply to the partial washing section of the washing.

[0032] Moreover, since a washing station will move up when the steam and warm water which are injected from a jet nozzle can be certainly applied to the partial washing section of the washing and a lid is opened further, since said washing station was attached in the field by the side of the cistern section of said lid, if it is completely at an obstacle in case the usual wash is performed, \*\*\*\* and user-friendliness are good.

[0033] Moreover, since it made possible adjustable [ of the injection direction (include angle) of said jet nozzle ], partial washing washing can be performed over the large area of the washing.

[0034] Moreover, since OFF/ON of the feed water to said washing station was made for closing motion of said lid to be interlocked with, a steam and water are not injected from a washing station in a lid at the time of an open beam.)

[0035] Since the steamy shutter which intercepts the front face of the nozzle of said jet nozzle is prepared, said steamy shutter is interlocked with closing motion of said lid and the front face of ZURU of said jet was intercepted / opened, even if the steam and water which remained the lid in the washing



station at the time of an open beam are injected, it is interrupted by the steamy shutter, and a user does not bathe or water does not hit.

[0036] Moreover, surround the perimeter of the nozzle of said jet nozzle and it is made to install in the irradiation range of Hazama with said washer. Since the end chip section which misses the steam and water which dispersed in the location which prepares scattering prevention covering formed in the shape of [ bellows-like ] a cartridge by elasticity material, and counters said cistern section of said scattering prevention covering was formed Since the scattering range of a steam can be stopped to the minimum, soiling the circumference inside the body of a washer with water can also be prevented, a user does not bathe or water does not hit.

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TECHNICAL FIELD

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[Field of the Invention] This invention relates to the washer which performs partial washing which removes partial dirt, such as a sleeve of clothing, and a collar.

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PRIOR ART

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[Description of the Prior Art] It is the plan showing the washer which can perform the conventional conventional partial washing shown in JP,57-10393,U, and drawing 12 has formed the opening 32 which throws clothing into the center section of the wrap top plate 31 for the upper part of the body of a washer. The upper part of this opening 32 is covered with the lid 33 which can be opened and closed freely. Moreover, the washing part 34 which makes a concavo-convex configuration near the opening 32 is formed by the front side of a top plate 31. In addition, various switches are formed in the control unit 35 prepared behind the top plate 31, and setting out of a washing process etc. is enabled. And after washing by rubbing a cuff or collars, such as a cutter shirt, etc. selectively by the washing part 34, from opening 32, the cutter shirt etc. was thrown into the laundry sink within the body of a washer (not shown), and it was washing by operating the switch of a control unit 35.

[0003] However, the activity which needs the force of rubbing clothing against the washing part 34 is hard work for an operator, and had the trouble of being user-unfriendly. Then, there is a washer equipped with partial washing equipment as shown in JP,8-32285,B. Drawing 13 is the perspective view of the partial washing equipment 41, in drawing, 42 is cylinder-like the body of revolution for washing, and two or more brush objects 43 are formed in the peripheral surface. The turning effort of a motor 45 established in the body 44 transmits and carries out revolution actuation of this body of revolution 42 for washing through the reducer style 46 and a revolving shaft 47. Moreover, he forms the washing base 48 under the body of revolution 42 for washing, and is trying to pass the washing 49 (not shown) between the body of revolution 42 for washing, and the washing base 48. The brush object 43 has set up spacing of the body of revolution 42 for washing, and the washing base 48 so that it may \*\*\*\* on the washing base 48 top face. And if the body of revolution 42 for washing is rotated in the direction of arrow-head A and the washing 49 is inserted from the end-face 51 side of the sliding surface-like crevice 50, while, as for a washed object, the washing 49 will pass through the inside of the sliding surface-like crevice 50, the brush object 43 washes a washed object. That is, the touch area of the body of revolution 42 for washing and the washing 49 is increased, and the area which washes partial dirt is increased.

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EFFECT OF THE INVENTION

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[Effect of the Invention] Since this invention is constituted as explained above, it does effectiveness as taken below so.

[0030] In the washer equipped with the wrap lid for the top face of the body of a washer which had the cistern section arranged in the interior, top covering which has opening which throws the washing into a bonnet and said cistern circles for the top face of said body of a washer, and said top covering It has the boiler which has a heating means, and a feed water means to supply water to said boiler. Since it had the washing station which forms the jet nozzle which injects a steam and water in the shape of jet to the washing using the pressure of the steam generated from said boiler, and changes Only the liquid which a cleaning effect is high and are a steam and warm water since a steam and warm water perform partial washing can wash the partial dirt of the washing, and since a solid-state is not contacted, partial washing without a cloth bruise can be performed.

[0031] moreover , since the jet nozzle of said washing station be arrange so that the edge which form opening of said top panel may be counter , and it be made to carry out fixed maintenance of the washing by Hazama of said lid and top covering , where a lid be close , the washing can be fix in the body of a washer , and the steam and warm water which be inject from a jet nozzle can be certainly apply to the partial washing section of the washing .

[0032] Moreover, since a washing station will move up when the steam and warm water which are injected from a jet nozzle can be certainly applied to the partial washing section of the washing and a lid is opened further, since said washing station was attached in the field by the side of the cistern section of said lid, if it is completely at an obstacle in case the usual wash is performed, \*\*\*\* and user-friendliness are good.

[0033] Moreover, since it made possible adjustable [ of the injection direction (include angle) of said jet nozzle ], partial washing washing can be performed over the large area of the washing.

[0034] Moreover, since OFF/ON of the feed water to said washing station was made for closing motion of said lid to be interlocked with, a steam and water are not injected from a washing station in a lid at the time of an open beam.

[0035] Since the steamy shutter which intercepts the front face of the nozzle of said jet nozzle is prepared, said steamy shutter is interlocked with closing motion of said lid and the front face of ZURU of said jet was intercepted / opened, even if the steam and water which remained the lid in the washing station at the time of an open beam are injected, it is interrupted by the steamy shutter, and a user does not bathe or water does not hit.

[0036] Moreover, surround the perimeter of the nozzle of said jet nozzle and it is made to install in the irradiation range of Hazama with said washer. Since the end chip section which misses the steam and water which dispersed in the location which prepares scattering prevention covering formed in the shape of [ bellows-like ] a cartridge by elasticity material, and counters said cistern section of said scattering prevention covering was formed Since the scattering range of a steam can be stopped to the minimum, soiling the circumference inside the body of a washer with water can also be prevented, a user does not bathe or water does not hit.

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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] In order to make an operator's burden light and to wash the dirt of the specific part of the washing selectively with the above conventional washers Although he is trying to wash partial dirt by making it \*\*\*\* on the brush object 43 of the body of revolution 42 for washing which contains the partial washing equipment 41 of the method which carries out revolution actuation of the body of revolution 42 for washing which established the brush object 43 on the body of a washer (not shown), and rotates the washing 49 With the partial washing equipment 41 of the method which carries out revolution actuation of the brush object 43, there was a fault that the nonconformity that the burden to the washing 49 for a slide contact for the brush object 43 and the washing 49 to wash the washing 49 will be large, and will damage the ground of the washing 49 selectively arose. And the bruise of the ground of parts, such as a collar and a sleeve, became intense rather than other parts with \*\* which is repeating and washing dirt, the cone collar, the sleeve, etc. with conventional partial washing equipment 41, and even if it was in the condition which can still be used except parts, such as a collar and a sleeve, there was also a trouble of having produced the result which shortens the life again. [0005] This invention was not made in order to solve the above technical problems, it can perform partial washing of the washing, without damaging the ground of the washing, and aims at obtaining the washer which had sufficient detergency in partial washing further.

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[Translation done.]

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MEANS

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[Means for Solving the Problem] The body of a washer which had the cistern section arranged in the interior in the washer concerning this invention, In the washer equipped with the wrap lid for the top face of top covering which has opening which throws the washing into a bonnet and said cistern circles for the top face of said body of a washer, and said top covering It has the boiler which has a heating means, and a feed water means to supply water to said boiler, and has the washing station which forms the jet nozzle which injects a steam and water in the shape of jet to the washing using the pressure of the steam generated from said boiler, and changes.

[0007] Moreover, the jet nozzle of said washing station is arranged so that the edge which forms opening of said top panel may be countered, and it is made to carry out fixed maintenance of the washing by Hazama of said lid and top covering.

[0008] Moreover, said washing station is attached in the field by the side of the cistern section of said lid.

[0009] Moreover, it makes possible adjustable [ of the injection direction of said jet nozzle ].

[0010] Moreover, OFF/ON of the feed water to said washing station is made for closing motion of said lid to be interlocked with.

[0011] Moreover, the steamy shutter which intercepts the front face of the nozzle of said jet nozzle is prepared, and said steamy shutter is interlocked with closing motion of said lid, and intercepts / opens the front face of said jet nozzle.

[0012] Moreover, surround the perimeter of the nozzle of said jet nozzle, it is made to install in the irradiation range of Hazama with said washer, scattering prevention covering formed in the shape of [ bellows-like ] a cartridge by elasticity material is prepared, and the end chip section which misses the steam and water which dispersed in the location which counters said cistern section of said scattering prevention covering is formed.

[0013]

[Embodiment of the Invention] The important section perspective view and drawing 2 which show the washer whose gestalt 1. drawing 1 of operation is the gestalt 1 of implementation of this invention are the sectional view of drawing 1 , and in drawing, the cistern section into which 1 puts the body of a washer and 2 puts the washing, and 3 are wrap top coverings about the upper part of the cistern section 2, and have prepared opening 3a which throws the washing into a center section. 4 is the lid which closes opening 3a, and forms the monitor aperture 5. And a lid 4 is supported by the top covering 3 and revolution supporting-point 4a free [ closing motion ]. 6 is the washing station arranged in the field of the lid 4 of the location which counters opening 3a. In addition, 21 is a switch mentioned later.

[0014] Next, the configuration of a washing station 6 is explained. Drawing 3 (a) is the perspective view of a washing station 6, and drawing 3 (b) is the decomposition perspective view of a washing station 6. 7 is a boiler and a flexible tube 8 is connected. A flexible tube 8 For the cam 12 and cam 12 which are a driver in contact with the cam groove 11 which is the follower which determines the revolution supporting point 10 of the tube guide 9 to support and the tube guide 9 supported free [ a revolution ] on a lid 4, and the support include angle of a tube guide 9, and a cam groove 11, rotation It consists of

revolving shafts 14 of the motor 13 to give and a motor 13.

[0015] Thus, actuation of the washer equipped with the constituted washing station 6 is explained based on drawing 3, drawing 4, and drawing 5. The sectional view of the washer with which drawing 4 set the washing, and drawing 5 are the block diagrams having shown the internal configuration of a boiler. \*\*\*\* of top covering which 15 has in the tooth back of the washing, the feed pipe with which 16 supplies water to a boiler 7 in the water from a water pipe etc., The valve in which, as for 17, impregnation of water carries out ON/OFF control, the heater at which 18 heats a boiler 7, The power source which connects 19 to a heater 18, the jet nozzle attached in the outlet of the flexible tube 8 with which the water included in a boiler 7 and a steam pass along 20, The switch with which 21 is interlocked with ON after the valve 17 has shut OFF and a lid 4 for the lid 4 in the state of an open beam, and 22 are the washing arranged in the location which counters a jet nozzle 20.

[0016] First, the field of the dirt part of the washing 22, such as a collar and a sleeve, is carried out, put and arranged between a lid 4 and the top covering 3 on the top face, and the washing 22 is arranged so that it may counter at a jet nozzle 20. At this time, by shutting a lid 4, a switch 21 is turned on and a valve 17 is opened. And a power source 19 is put into a heater 18, power is supplied, and a boiler 7 is heated at 100 degrees or more. And since it is in the condition which the valve 17 opened, tap water is supplied to a boiler 7 via a feed pipe 15. The water included in the interior of a boiler 7 boils, and it becomes a steam. Thus, if water becomes a steam, vapor pressure will rise and the interior of a boiler 7 will become high voltage. And the steam and warm water of the boiler 7 interior jump out of the nozzle (not shown) at the head of a jet nozzle 20 with this pressure. The nozzle (not shown) at the head collides certainly [ since it is arranged in the location which counters \*\*\*\* 15 of the top covering 3 ] to that of the washing 22 which the steam and warm water which jumped out of the jet nozzle 20 have on \*\*\*\* 15 of the top covering 3, and a jet nozzle 20 removes dirt 22a of the washing 22. In addition, if the commercial detergent is beforehand applied to the dirt 22a part of the washing 22, since dirt 22a will begin to melt, clearance of dirt becomes easy.

[0017] Although the steam and warm water which were injected from the jet nozzle 20 splash when it collides with the washing 22, and they scatter on all sides, since the steam and warm water which scattered up are interrupted with a lid 4, dew a lid 4 and fall into the cistern section 2, it does not jump out besides the body 1 of a washer.

[0018] Here, the irradiation range L of the jet nozzle 20 of a washing station 6 and the washing 22 (refer to drawing 5) is explained. If an artificial solid fabric (what simulated collar dirt) is used for a trial cloth as the washing 22 and it asks for (%) whenever [ washing ] based on a JIS electric washing machine C9606 washing trial, a result as shown in drawing 6 will be brought. (%) is [ whenever / washing ] (%) = (front [ after / washing / reflection factor-washing ] reflection factor) / (front [ original cloth reflection factor-washing ] reflection factor) x 100 whenever [ washing ] by the reflection factor method. It computes using a formula.

[0019] In addition, using the thing of the output of 1350W as conditions for an experiment, every 100g/m of penetrant removers should supply water to the boiler 7 in the tap water adjusted by 22 degrees C, and the heater 18 of a boiler 7 should carry out optimum dose spreading of the liquid detergent only for partial washings of marketing beforehand on a contamination cloth. Moreover, the aperture of a jet nozzle 20 used the 2mm thing.

[0020] If this experimental result is looked at, whenever [ washing / 40% of / which is obtained by the usual washer washing ] can be obtained with the irradiation range L of 65mm. Therefore, the irradiation range L of a jet nozzle 20 and the washing 22 can detach to 65mm, and can also acquire a remarkable cleaning effect. Thus, since a dirt part can be washed also in the distance which separated to 65mm, the conditions of the thickness of the washing 22 are made widely. In addition, it can carry out in a short time extremely with 0.15 seconds till the completion of dirt washing of the surface of cloth which irradiated a steam and warm water.

[0021] next, feed water of the steam and water which are injected from a jet nozzle 20 -- amount of water is explained. the above -- the same -- an irradiation range L -- the irradiation time per 10mm and jet stream cross section -- 0.3 seconds -- carrying out -- the amount of closing motion of a valve 17 --



changing -- feed water -- as a result of changing amount of water and performing a washing trial, the result as shown in drawing 7 was able to be obtained. In addition, since whenever [ washing ] seldom changed in Hazama's irradiation range L of 0-10mm but whenever [ of a little less than 46% / high washing ] had been obtained from change of whenever [ washing / of above-mentioned drawing 6 ], having set the irradiation range L to 10mm experimented with the irradiation range L of 10mm.

Consequently, whenever [ washing / 40% of / which is obtained by the usual washer washing ] can be obtained by amount of water 30g/m, and can wash by the flow rate of very little water.

[0022] Moreover, since there is an inclination for whenever [ washing ] not to go up, by the feed water flow rate of 70g or more to a boiler 7 and the feed water beyond this becomes useless as shown in drawing 7 , it is unnecessary in feed water of 70g or more. Although relation with the capacity, as for this, for a boiler 7 to make a steam also influences, whenever [ washing ] is 55% or more, and since it is more than whenever [ required / washing ], water supply amounts of 70g or less are enough as it.

[0023] Therefore, according to the configuration of the washer equipped with the washing station 6 indicated in the gestalt 1 of operation The field which has partial dirt, such as a collar and a cuff, between a lid 4 and the top covering 3 is arranged on both sides of the washing 22 so that it may come to the part of \*\*\*\* 15 of the top covering 3. By arranging the jet nozzle 20 of a washing station 6 in the location which counters \*\*\*\* 15 of the top covering 3 Since a steam and warm water can be injected from a jet nozzle 20, can make it able to collide with the washing 22, and a dirt part can be washed, it will interlock further if a lid 4 is opened, and a valve 17 closes Supply of water stops, injection of the steam from a jet nozzle 20 and warm water is also stopped, and neither a steam nor warm water is flown to a user. Moreover, since a valve 17 opens where a lid 4 is closed, a fear of closing a lid 4, washing of the washing 22 being performed, and a hot steam not scattering to the exterior of the body 1 of a washer, and exposing a user to the elevated temperature of a steam is absolutely none at the time of the activity of a washing station 6.

[0024] To the gestalt 2. pan of operation, the washing station 6 arranged by the body 1 of a washer shows what performs revolution actuation, and drawing 8 looks at a motion of a flexible tube 8, a tube guide 9, and a jet nozzle 20 from a top face. The configuration of a washing station 6 is the same as that of the gestalt 1 of the above-mentioned implementation, and the explanation is omitted. If power is supplied to a motor 13 from the motor power source 23, a revolving shaft 14 will rotate and the cam 12 attached to the revolving shaft 14 will rotate. If a cam 12 rotates, a load will be applied to a cam groove 11 and a tube guide 9 will move. Rotation of a cam 12 is changed into the reciprocating motion which used the revolution supporting point 10 of a tube guide 9 as the supporting point through the cam groove 11, and a tube guide 9 moves in the direction of an arrow head of drawing 8 repeatedly. Since the steam and warm water which are injected from a jet nozzle 20 since it moves to the washing 22 at this time so that a jet nozzle 20 may trace can be automatically poured uniformly to the large range of the washing 22, the washing range can be made large.

[0025] moreover, the configuration of opening (not shown) which counters opening 2a of the cistern section 2 of the top covering 3 which sandwiches the washing 22 -- a square, although the irradiation range L of the washing 22 and a jet nozzle 20 will separate depending on the rotation include angle of a washing station 6 even if circular Since 40% can be obtained whenever [ washing ] to the irradiation range L of 65mm as shown in the experimental result of the gestalt 1 of operation Wide range partial washing can be washed without dropping washing capacity, even if there are an opening configuration of the top covering 3 and a rotation include angle which the irradiation range L of a jet nozzle 20 and the washing 22 leaves by rotation of a washing station 6 (it becomes far).

[0026] Gestalt 3. drawing 9 of operation shows the sectional view of the washer which is the gestalt 3 of implementation of this invention, and the same thing as the gestalt 1 of the above-mentioned implementation considers as a same sign, and omits that explanation. As 24 is a steamy shutter, 25 is a spring and drawing is shown in drawing 9 (a) When a lid 4 is opened, as a spring 25 reduces the steamy shutter 24, it comes to interrupt the transverse plane of the nozzle (not shown) (nozzle as used in the field of a claim) of a jet nozzle 20 and it is shown in drawing 9 (b) If a lid 4 is closed, the steamy shutter 24 will move contacting the top face of the top covering 3 from the transverse plane of a jet nozzle 20,

and the steamy shutter 24 will open the transverse plane of the nozzle (not shown) of a jet nozzle 20. Therefore, when water remains the lid 4 in the boiler 7 at the time of an open beam, even if it becomes a steam and warm water from a jet nozzle 20 and is injected, it is user-friendly, without colliding with the steamy shutter 24, not jumping out of the body 1 of a washer, and scattering to a user.

[0027] Gestalt 4. drawing 10 (a) and drawing 10 (b) of operation are the important section perspective view and decomposition perspective view of a washing station showing the washer which is the gestalt 4 of implementation of this invention. In drawing, the same sign is given to the same part as the gestalten 1-3 of the above-mentioned implementation, and the explanation is omitted. Scattering prevention covering formed so that 26 might be formed in the shape of bellows for a flexible raw material, the perimeter of a jet nozzle 20 might be surrounded and it might install to the irradiation range L of Hazama with the washing 22, and 27 had been formed in the location which counters the cistern section 2 of the scattering prevention covering 26, and are the chip section.

[0028] Thus, as shown in drawing 11, the steam and warm water out of which have arranged the scattering prevention covering 26 also between the washing 22 and the jet nozzles 20 (irradiation range L) which were put with \*\*\*\* 15 and the lid 4 of the top covering 3, and it came from the jet nozzle 20 during washing while it surrounded the perimeter of a head of a jet nozzle 20 collide with the washing 22 like the arrow head of a continuous line, and as for the constituted washing station 6, dirt is removed. A steam and warm water disperse at this time. It is reflected with the scattering prevention covering 26, and the steam and warm water which dispersed are cut like the arrow head of a dotted line, and flow out of the chip section 28. That is, the scattering range of a steam and warm water can be stopped to the minimum by forming the scattering prevention covering 26 in which the end chip section 28 which surrounds an irradiation range L part from the perimeter of a jet nozzle 20, and serves as a recess path of a steam with the scattering prevention covering 26 was formed in the location which counters the cistern section 2.

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## DESCRIPTION OF DRAWINGS

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### [Brief Description of the Drawings]

[Drawing 1] It is the important section perspective view showing the washer which is the gestalt 1 of implementation of this invention.

[Drawing 2] It is the important section sectional view showing the washer which is the gestalt 1 of implementation of this invention.

[Drawing 3] (a) It is the perspective view of the washing station in which the washer which is the gestalt 1 of implementation of this invention is shown.

(b) It is the decomposition perspective view of the washing station in which the washer which is the gestalt 1 of implementation of this invention is shown.

[Drawing 4] It is the important section sectional view showing the washer which is the gestalt 1 of implementation of this invention.

[Drawing 5] It is the important section block diagram showing the washer which is the gestalt 1 of implementation of this invention.

[Drawing 6] It is drawing showing the distance of the jet nozzle and the washing in which the washer which is the gestalt 1 of implementation of this invention is shown, and the relation of whenever [ washing ].

[Drawing 7] It is drawing showing the feed water flow rate of the washing station in which the washer which is the gestalt 1 of implementation of this invention is shown, and the relation of whenever [ washing ].

[Drawing 8] It is the plan of the washing station in which the washer which is the gestalt 2 of implementation of this invention is shown.

[Drawing 9] (a) It is the important section perspective view of the washing station in which the washer which is the gestalt 3 of implementation of this invention is shown.

(b) It is the decomposition perspective view showing the washer which is the gestalt 3 of implementation of this invention.

[Drawing 10] (a) It is the important section perspective view showing the washer which is the gestalt 4 of implementation of this invention.

(b) It is the decomposition perspective view showing the washer which is the gestalt 4 of implementation of this invention.

[Drawing 11] It is the important section block diagram of the washer which is the gestalt 4 of implementation of this invention.

[Drawing 12] It is the plan showing the conventional washer.

[Drawing 13] It is the important section perspective view showing the conventional washer.

### [Description of Notations]

1 Body of Washer, 2 Cistern Section, 3 Top Covering, 3a Opening, 4 A lid, 5 monitor apertures, 6 A washing station, 7 A boiler, 8 Flexible tube, 9 A tube guide, 10 The revolution supporting point, 11 A cam groove, 12 Cam, 13 A motor, 14 revolving shafts, 15 \*\*\*\*, 16 A feed pipe, 17 Valve, 18 A heater, 19 A power source, 20 A jet nozzle, 21 A switch, 22 The washing, 22a Dirt, 23 Dirt, 23 A motor power

source, 24 A steamy shutter, 25 A spring, 26 Scattering prevention covering, 27 end chip section.

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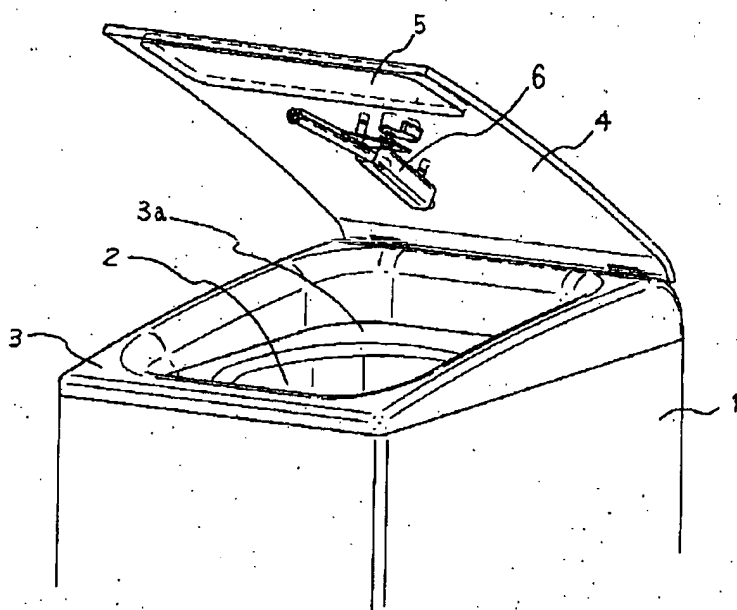
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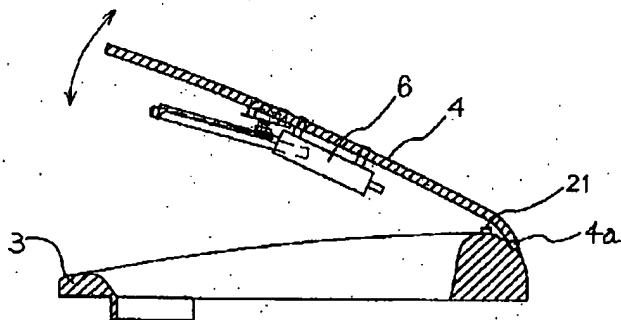
DRAWINGS

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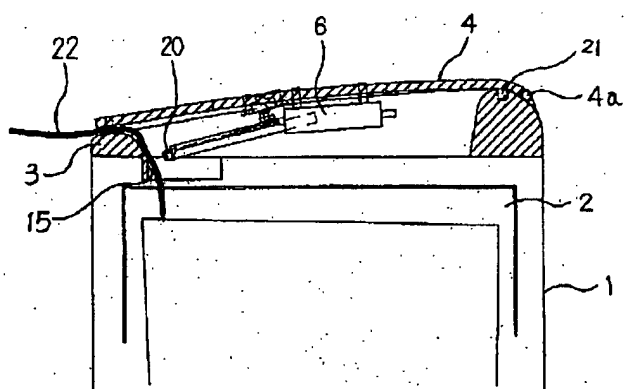
[Drawing 1]



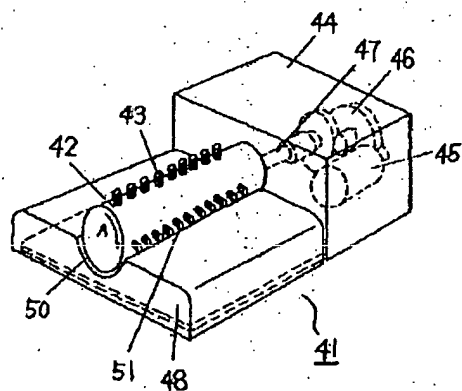
[Drawing 2]



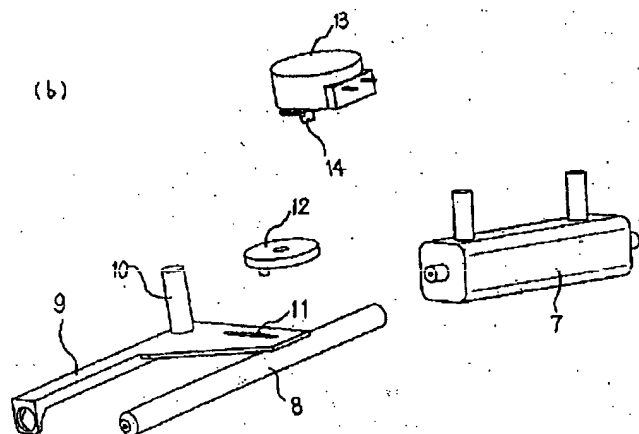
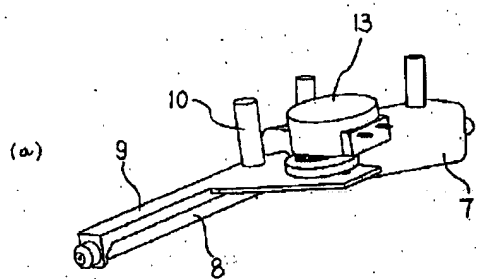
[Drawing 4]



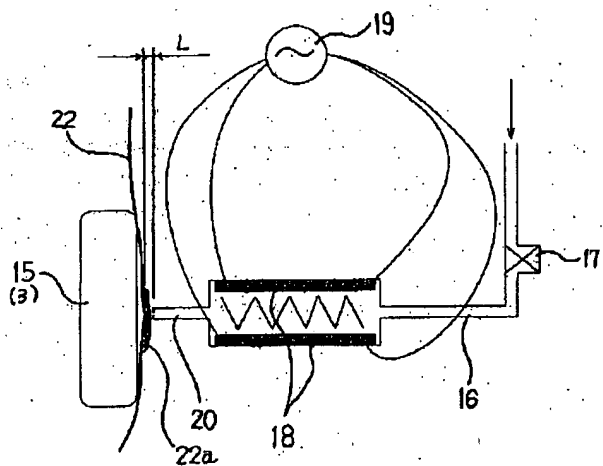
[Drawing 13]



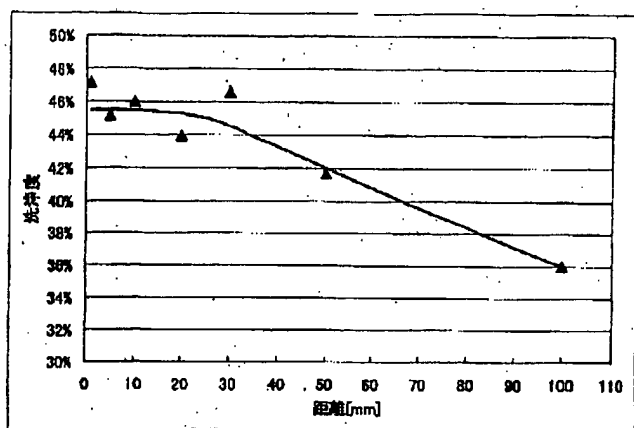
[Drawing 3]



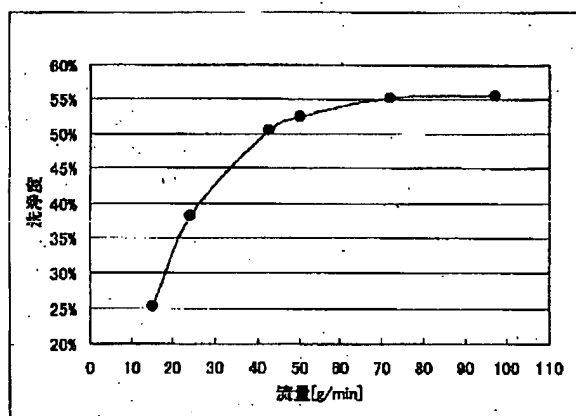
[Drawing 5]



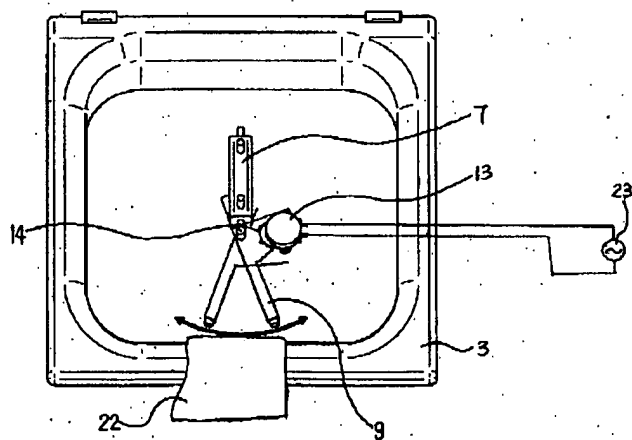
[Drawing 6]



[Drawing 7]

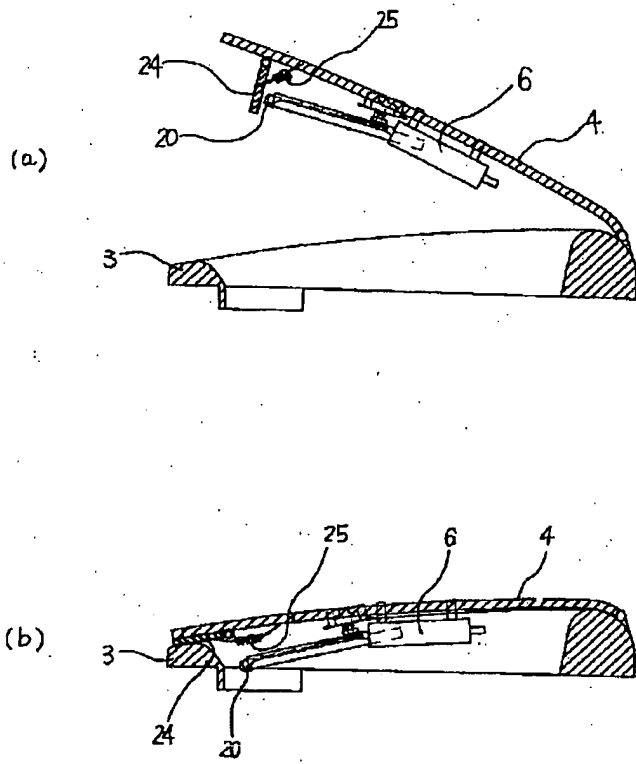


[Drawing 8]

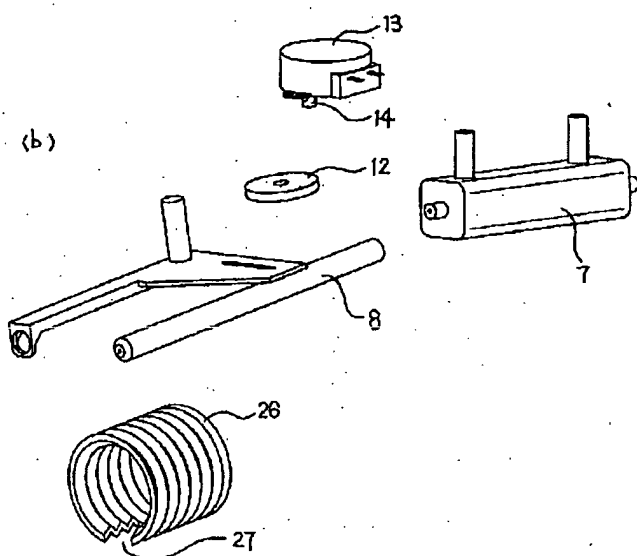
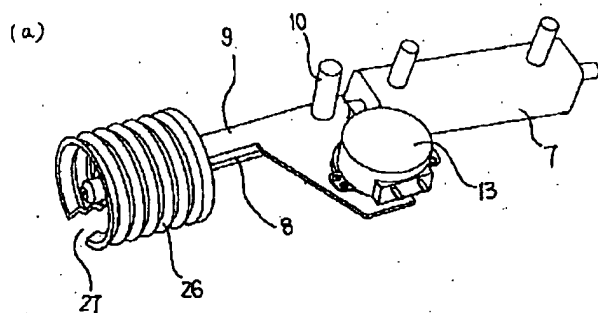


[Drawing 9]

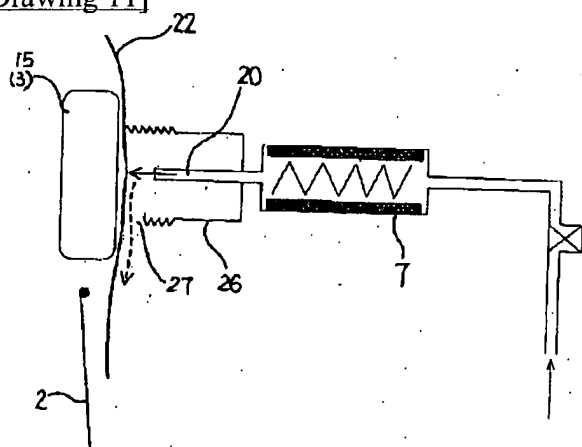




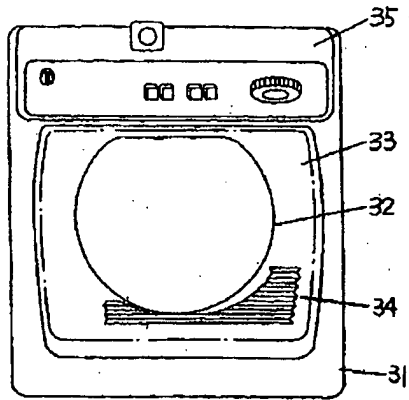
[Drawing 10]



[Drawing 11]



[Drawing 12]



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[Translation done.]